

WHAT IS CLAIMED IS:

1. Pressure-pulse therapy apparatus, comprising:
 - a disk-like acoustic lens, having:
 - a center section, having predetermined first curvature and focusing characteristics associated therewith, and formed to direct a primary pressure pulse propagating thereon, so as to form a first subordinate pressure pulse of a compound pressure pulse; and
 - a plurality of ring sections, substantially concentric with said center section, having predetermined at least one second curvature and focusing characteristics associated therewith, and formed to direct a primary pressure pulse propagating thereon, so as to form a plurality of subordinate pressure pulses of said compound pressure pulse;
 - proximal and distal sides with respect to a tissue for treatment;
 - an enclosure with an open end;
 - a flexible diaphragm, which caps said open end;
 - a fluid medium, contained within said enclosure, for facilitating propagation of the pressure pulses;
 - a pressure-pulse source, which includes an electromagnetic pressure-pulse source, immersed in the medium, located at said distal side of said acoustic lens, for generating a collimated primary pressure pulse that propagates in said medium, and impinges on said acoustic lens; and
 - a power supply, which supplies power to said pressure-pulse source.

2. The apparatus of claim 1, wherein said predetermined curvatures and focusing characteristics are determined by mathematical equations for governing a shape of said plurality of ring sections and a shape of said center section.

3. The apparatus of claim 1, wherein said predetermined curvatures and focusing characteristics further include a predetermined zone at which both said first subordinate pressure pulse and said plurality of subordinate pressure pulses are directed.

4. The apparatus of claim 1, wherein said predetermined curvatures and focusing characteristics include: a predetermined point at which said first subordinate pressure pulse is directed; and a predetermined point at which at least one of said plurality of subordinate pressure pulses is directed.

5. The apparatus of claim 1, wherein said predetermined curvatures and focusing characteristics include: a predetermined zone at which said first subordinate pressure pulse is directed; and a predetermined zone at which at least one of said plurality of subordinate pressure pulses is directed.

6. The apparatus of claim 1, wherein said predetermined curvatures and focusing characteristics further include a predetermined phase difference between said first subordinate pressure pulse and at least one of said plurality of subordinate pressure pulses.

7. The apparatus of claim 6, wherein said phase difference is between 0.5 and 1 microsecond.

8. The apparatus of claim 1, wherein each of said plurality of ring sections, having predetermined curvature and focusing characteristics associated therewith, are formed to reflect a primary pressure pulse propagating thereon, so as to form a plurality of additional subordinate pressure pulses of said compound pressure pulse.

9. The apparatus of claim 8, wherein said plurality of additional subordinate pressure pulses of said compound pressure pulse further include predetermined phase differences between them.

10. The apparatus of claim 8, wherein said plurality of ring sections comprise substantially ellipsoid ring sections, each having proximal and distal focal points with respect to said acoustic lens, wherein said proximal focal points of said plurality of ring sections substantially coincide,

wherein said distal focal points of said plurality of ring sections are adjacent to each other, and wherein said focal point of said center section and said proximal focal points of said plurality of ring sections substantially coincide.

11. The apparatus of claim 1, wherein said center section is a cutout section that allows a portion of said primary pressure pulse to pass through it, undisturbed.

12. The apparatus of claim 1, wherein said electromagnetic pressure-pulse source is a disk-like source.

13. The apparatus of claim 1, wherein said acoustic lens is composed of a polymer material.

14. The apparatus of claim 1, further comprising a support fixture for supporting a portion of a body of a subject to be treated.

15. Pressure-pulse therapy apparatus, comprising:
a dome-shaped reflector, having:

a center section, having predetermined first curvature and focusing characteristics associated therewith, and formed to direct a primary pressure pulse propagating thereon, so as to form a first subordinate pressure pulse of a compound pressure pulse; and

a plurality of ring sections, substantially concentric with said center section, having predetermined second curvature and focusing characteristics associated therewith, and formed to direct a primary pressure pulse propagating

thereon, so as to form a plurality of subordinate pressure pulses of said compound pressure pulse;

proximal and distal sides with respect to a tissue for treatment;

an enclosure with an open end;

a flexible diaphragm, which caps said open end;

a fluid medium, contained within said enclosure, for facilitating propagation of the pressure pulses;

a pressure-pulse source, which includes an electromagnetic pressure-pulse source, immersed in the medium, located at said distal side of said dome-shaped reflector, for generating a collimated primary pressure pulse that propagates in said medium, and impinges on said dome-shaped reflector; and

a power supply, which supplies power to said pressure-pulse source.

16. The apparatus of claim 15, wherein each of said plurality of ring sections, having predetermined curvature and focusing characteristics associated therewith, are formed to reflect a primary pressure pulse propagating thereon, so as to form a plurality of additional subordinate pressure pulses of said compound pressure pulse.

17. The apparatus of claim 16, wherein said plurality of additional subordinate pressure pulses of said compound pressure pulse further include predetermined phase differences between them.

18. The apparatus of claim 16, wherein said plurality of ring sections comprise substantially ellipsoid ring sections, each having proximal and distal focal

points with respect to said reflector, wherein said proximal focal points of said plurality of ring sections substantially coincide,

wherein said distal focal points of said plurality of ring sections are adjacent to each other, and wherein said focal point of said center section and said proximal focal points of said plurality of ring sections substantially coincide.